

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of) **Mail Stop APPEAL BRIEF -**
Tomi Veikonheimo et al.) **PATENTS**
Application No.: 10/539,089) Group Art Unit: 3617
Filed: December 14, 2005) Examiner: Daniel V. Venne
For: ARRANGEMENT IN A) Confirmation No.: 9066
PROPULSION SYSTEM)
)

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the Examiner's Answer of January 19, 2010, Appellants offer the following additional comments. In the interest of conciseness, select key issues that could be dispositive are addressed below. Any express failure to challenge a contention raised in the Examiner's Answer should not be construed as acquiescence by the Appellants to the correctness thereof. Instead, reference IS made to the record as a whole, and in particular to the full Appeal Brief of December 15, 2009.

It is alleged for the first time in the Examiner's Answer that the claimed invention would have been obvious based on the rationale that "the rejection combines known features to achieve expected results." See Examiner's Answer, page 8. This contention is incorrect. First, as explained in detail in the Appeal Brief, the combination of particular features is carried out in a manner which is contrary to controlling legal precedent. Second, the alleged results are not to be expected, and the assertions that they would have been expected are completely unsubstantiated.

For example, claims 1 and 12 require that the flow plates are provided on the whole length of the forward or second cap, and link up to each other and extend beyond an aft facing end of the cap. It is alleged in the Examiner's Answer that it would have been obvious in view of *Akimoff* to modify the combination of *Varis* and *Parsons* in order to provide this feature. Specifically, it is alleged in the Examiner's Answer that:

Making the flow plates of the forward propeller hub cap of such a combination link up to each other and extend beyond an aft facing end of the cap and extend the whole length of the cap would provide the expected result of enhanced waterflow for the propeller arrangement.
(Emphasis added; Examiner's Answer, pgs. 9-10)

The above-quoted contention is inconsistent with the teachings of the applied prior art references themselves, and is rebutted by the Declaration evidence of record.

First, the alleged expected result is unclear. Namely, it is unclear what is meant by "enhanced water flow for the propeller arrangement." This is not a stated result of either *Parsons* nor *Akimoff*. Instead, *Parsons* teaches providing "small vanes" on a propeller cone which are effective to "prevent cavitation around the cone" (emphasis added; *Parsons*, pg. 3, line 9). It is important to realize that *Parsons* teaches preventing cavitation with vanes which do not extend along the entire length of the cone or cap, much less link up to one another and extend beyond and aft facing end of the cap or cone, as clearly required by claims 1 and 12. This being the case, it is unclear why one of ordinary skill in the art would have ever been motivated to turn to the teachings of *Akimoff* in an attempt to prevent cavitation around the cap or cone as alleged in the grounds for rejection. Namely, *Parsons*

purportedly accomplishes this without the necessity of extending the small vanes in the manner required by claims 1 and 12.

Akimoff teaches providing a cap constructed to provide essentially the same function:

...the greater the activity of the central core-vortex, the greater the "circulation" about each blade, from which results greater thrust and less danger of cavitation owing to increased velocity around the blade sections. This decrease in cavitation is, in itself, an important and attractive feature. . .*Akimoff*, pg. 2, lines 7-12

It is important to note that a careful reading of *Akimoff* reveals that there is no teaching or suggestion whatsoever of any nexus between the length of the vanes on the cone or cap described therein, and the provision of any particular benefit or advantage associated therewith. In fact, the only nexus disclosed between any particular feature of the hub arrangement or *Akimoff* and its ability to provide the desired affect of decreasing cavitation refers to the fact that the ribs extend beyond the diameter of the hub, contrary to the requirements of the presently claimed invention:

In Figures 3 and 4, light ribs 17 are provided on the outside of the hub appendage 13, which, under certain conditions, for instance, low speed, will yield more affect in producing of an increased activity of the central vortex. *Akimoff*, pg. 4, lines 24-28.

In addition to the above, Appellants have submitted Declaration evidence explaining how the proposed modification involving extension of the vanes of *Parsons* such they extend along the entire length of the cone or cap, and link up and extend beyond an aft facing end of the cap, would adversely impact "water flow for the propeller arrangement", thus directly contradicting the unsubstantiated assertions

upon which the grounds for rejection are based, and which are quoted above from pages 9-10 of the Examiner's Answer.

For at least the reasons explained above, contrary to the assertions made for the first time in the Examiner's Answer the features cited in the prior art are improperly combined, are not combined in a predictable fashion, and do not achieve expected results.

Also raised for the first time in the Examiner's Answer is the KSR decision. In this regard, it is alleged on page 12 of the Examiner's Answer that: "the KSR decision renders Applicants' [sic: Appellants'] arguments with respect to motivation to combine moot" (the Examiner's Answer, pg. 12). However, nothing in the KSR decision renders any of Applicants' arguments contained in the Appeal Brief moot.

Nothing in the KSR decision sanctions focusing solely on the differences between the claimed invention and the prior art, and failing to consider the invention as a whole (Appeal Brief, pgs. 6-7). Nothing in the KSR decision sanctions hindsight as an appropriate reason for alleging obviousness of a claimed invention (Appeal Brief, pgs. 6-7). Nothing in the KSR decision supports the notion that Declaration evidence can be dismissed without squarely addressing or explaining why the evidence presented is deficient (Appeal Brief, pgs. 7-8).

The grounds for rejection mention "design choice" four times as justification for supporting the conclusion of obviousness. Nothing in KSR sanctions the use of "design choice" as an appropriate rationale in support of obviousness, especially when Appellants have presented evidence which establishes the complexities and counter considerations involved in the design of such flow plates, particularly in the

context of CRP systems, none of which the prior art recognized or appreciated (Appeal Brief, pgs. 8-10).

Finally, nothing in KSR supports the notion that only select portions of a prior art reference should be considered, rather than considering the prior art reference as a whole, including those portions or teachings contained therein which would lead one of ordinary skill in the art away from the requirements of the presently claimed invention (Appeal Brief, pg. 9).

It is alleged for the first time in the Examiner's Answer that the limitation appearing in claim 12 reciting "wherein the flow plates are constructed and arranged to eliminate cavitation in the separation zone" constitutes functional language and does not distinguish the claimed invention over the prior art. Appellants respectfully traverse this assertion. First, characterizing a claim limitation as "functional" does not mean that it can be ignored. All words of the claim must be considered in assessing patentability. Second, Appellants respectfully traverse this characterization. Namely, the language clearly on its face sets forth that the flow plates are constructed and arranged to eliminate cavitation in the separation zone. Therefore, there is a clear link between structure and function and in the above quoted limitation. It is further alleged in the Examiner's Answer that the combination of *Varis*, *Parsons* and *Akimoff* "would be considered capable of performing this function. . ." For the reasons previously explained, the proposed combination of prior art references is improper, and would not have led one of ordinary skill in the art to arrive at the requirements of the presently claimed invention in the first place. Secondly, as noted herein neither *Parsons* nor *Akimoff* contain any teachings whatsoever with respect to reduction of elimination of cavitation affects in counter

rotating propeller systems. Instead, each of these references is directed to a single propeller arrangement only. As such, neither *Parsons* nor *Akimoff* contain any teaching disclosure, teaching or suggestion whatsoever as to which of the forward or aft facing propeller of a counter rotating propeller system should be modified in the manner suggested. This point has been made several times in the record of this application, but never squarely addressed by the Examiner. Therefore, for at least this additional reason, the assertions made for the first time on page 10 of the Examiner's Answer are believed to be incorrect and constitutes reversible error.

With respect to the rejection of claim 5, the basis for this rejection as set forth in the final rejection of June 15, 2009 rested solely upon a "design choice" rationale. It is alleged for the first time in the Examiner's Answer that the limitation of claim 5 reciting "wherein the number of flow plates is independent of the blades of the forward propeller and the position of the flow plates as independent of the position of the blades of the forward propeller" is considered to be satisfied by the combination of prior art references because: "Applicant has not defined 'independent' and has not recited any specific number or position for the flow plates or propeller blades." However, Appellants is not required to define well-known common words appearing in the claims. Lack of a definition is not an excuse to ignore claim limitations. Similarly, whether or not any specific number or position of flow plates for propeller blades are recited is irrelevant for purposes of determining whether what is claimed is in fact obvious. Positively recited claim limitations must be given weight and cannot be ignored on the basis that they are allegedly broad. In fact, even the new theory presented on page 11 of the Examiner's Answer as to why the subject matter recited in claim 5 would have been obvious is still clearly deficient on its face. In this

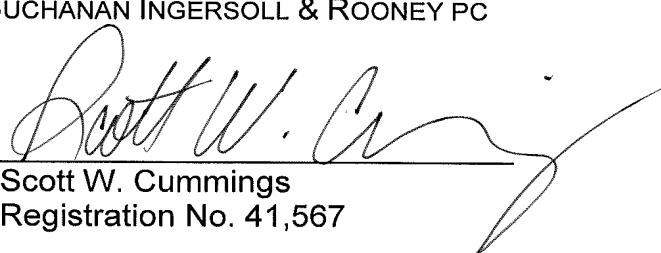
regard it is simply alleged that: "Akimoff shows various numbers and positions of flow plates in Figs 3-12, and Fig. 1 applies to a screw propeller of any design (see pg. 3, lines 24-25)." This blanket and conclusory allegation fails to explain how the cited portions of *Akimoff* satisfy the limitations appearing in claim 5. In addition, as previously noted, neither *Parsons* nor *Akimoff* contain any disclosure or suggestions whatsoever as to which cap of two opposing counter rotating propellers in a CRP arrangement should be modified. Thus, it is not surprising that the grounds for rejection gloss over this fact and fail to explain why it would have been obvious to one of ordinary skill in the art to have provided the claimed flow plates on the forward rather than the aft propeller of a CRP arrangement. As such, there is clearly no disclosure or suggestion whatsoever that it would have been obvious to provide the number of flow plates in position thereof independent of the number and position of blades of the forward propeller as required by claim 5.

For at least the reasons given above, in the Appeal Brief of December 15, 2009, and appearing elsewhere in the prosecution record of this application, Appellants respectfully request that the Board reverse the Examiner's rejections.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: March 16, 2010

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